

WHAT IS CLAIMED IS:

1. An information erase method that handles  
bitstream information formed by a stream object which  
includes a first data unit, a second data unit having  
5 one or more first data units, and a third data unit  
having one or more second data units, wherein

a portion of bitstream information included in the  
stream object is allowed to be erased in unit of the  
third data unit.

10 2. An erase range designation method that handles  
bitstream information formed by a stream object which  
includes a first data unit, a second data unit having  
one or more first data units, and a third data unit  
having one or more second data units, and streamer  
15 information that manages the stream information,  
wherein

the bitstream information includes information of  
a program formed of one or more cells, and information  
of a program chain indicating a sequence of the program  
20 or a portion thereof,

the information of the program chain is included  
in the streamer information,

the information of the program chain includes  
start time information of the first data unit including  
25 contents of the cell, and end time information of the  
first data unit including the contents of the cell, and  
an erase range of a portion of bitstream

information included in the stream object is designated by the start time information and the end time information.

3. A temporary erase state setting method that  
5 handles bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, wherein

10 a portion of bitstream information included in the stream object is allowed to be set in a temporary erase state in unit of the third data unit.

4. A temporary erase range designation method  
that handles bitstream information formed by a stream  
object which includes a first data unit, a second data  
15 unit having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, wherein

20 the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain is included in the streamer information,

25 the information of the program chain includes temporary erase start time information of the first data unit including contents of the cell, and temporary

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erase end time information of the first data unit including the contents of the cell, and

a temporary erase range for a portion of bitstream information included in the bitstream object is  
5 designated by the temporary erase start time information and the temporary erase end time information.

5. An information management method that handles bitstream information formed by a stream object which  
10 includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, wherein

15 the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain is included  
20 in the streamer information,

the information of the program chain includes start time information of the first data unit including contents of the cell, temporary erase start time  
information of the first data unit including the  
25 contents of the cell, and temporary erase end time information of the first data unit including the contents of the cell, and

a temporary erase range for a portion of bitstream information included in the bitstream object is designated by the temporary erase start time information and the temporary erase end time information.

6. An information management method according to claim 5, wherein

when the start time information matches a head of the first data unit that starts within the third data unit, the streamer information is rewritten by adjusting the temporary erase start time information to the start time information of the first one of the first data units which starts within the third data unit that includes the first data unit with the start time information.

7. An information management method that handles bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, wherein

the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain is included

in the streamer information,

the information of the program chain includes  
start time information of the first data unit including  
contents of the cell, temporary erase start time  
5 information of the first data unit including the  
contents of the cell, and temporary erase end time  
information of the first data unit including the  
contents of the cell,

a temporary erase range for a portion of bitstream  
10 information included in the bitstream object is  
designated by the temporary erase start time  
information and the temporary erase end time  
information, and

when the cell corresponding to a portion  
15 designated as the temporary erase range includes a head  
of the stream object, the streamer information is  
rewritten by adjusting the temporary erase start time  
information to the start time information of the first  
one of the first data units which starts within the  
20 third data unit that includes the first data unit with  
the start time information.

8. An information management method that handles  
bitstream information formed by a stream object which  
includes a first data unit, a second data unit having  
25 one or more first data units, and a third data unit  
having one or more second data units, and streamer  
information that manages the stream information,

wherein

the bitstream information includes information of  
a program formed of one or more cells, and information  
of a program chain indicating a sequence of the program  
or a portion thereof,

the information of the program chain is included  
in the streamer information,

the information of the program chain includes  
start time information of the first data unit including  
contents of the cell, temporary erase start time  
information of the first data unit including the  
contents of the cell, and temporary erase end time  
information of the first data unit including the  
contents of the cell,

a temporary erase range for a portion of bitstream  
information included in the bitstream object is  
designated by the temporary erase start time  
information and the temporary erase end time  
information, and

the streamer information is rewritten by adjusting  
the temporary erase start time information to the start  
time information of the first one of the first data  
units which starts within another third data unit  
immediately followed by the third data unit that  
includes the first data unit with the start time  
information.

9. An information management method that handles

bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information,  
5 wherein

the bitstream information includes information of a program consisting of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,  
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the information of the program chain is included in the streamer information,

the information of the program chain includes start time information of the first data unit including contents of the cell, temporary erase start time  
15 information of the first data unit including the contents of the cell, and temporary erase end time information of the first data unit including the contents of the cell,

a temporary erase range for a portion of bitstream information included in the bitstream object is designated by the temporary erase start time information and the temporary erase end time information, and  
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the streamer information is rewritten by adjusting the temporary erase end time information to the start time information of the first one of the first data  
25

units which starts within the third data unit that includes the first data unit which immediately follows the cell corresponding to the portion designated as the temporary erase range.

5           10. An information management method that handles  
bitstream information formed by a stream object which  
includes a first data unit, a second data unit having  
one or more first data units, and a third data unit  
having one or more second data units, and streamer  
10 information that manages the stream information,  
wherein

the streamer information includes management  
information of the stream object, and

when a head portion of the stream object is  
15 deleted, the third data unit located at a head of the  
stream object after deletion remains unchanged, and  
only contents of the management information  
corresponding to the deleted portion are changed in  
correspondence with the deletion.

20           11. A playback sequence setting method that  
handles bitstream information formed by a stream object  
which includes a first data unit, a second data unit  
having one or more first data units, and a third data  
unit having one or more second data units, and streamer  
25 information that manages the stream information,  
wherein

the bitstream information includes information of



a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

5 the streamer information includes information of the program chain,

the information of the program chain includes start time information of the first data unit including contents of the cell, and

10 when a boundary between a plurality of neighboring third data units does not temporally correspond to the start time information, one or more of the first data units within a range from a head position of the third data unit including the first data unit indicated by the start time information to a position indicated by the start time information is/are excluded from a  
15 playback sequence of the program chain.

12. A bitstream information encode method that handles bitstream information formed by a stream object which includes a first data unit, a second data unit  
20 having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, said bitstream information encode method comprising:

25 appending a time stamp to each of one or more packet data formed of the first data unit;

segmenting a sequence of one or more packet data with the time stamp in unit of the third data unit; and

inserting a header, including information that pertains to the packet data, in a first one of the second data units within the third data unit.

5 13. A method of recording bitstream information encoded by the method of claim 12 on an information medium.

10 14. A bitstream information encode method that handles bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, said bitstream information encode method comprising:

appending a time stamp to each of one or more packet data formed of the first data unit;

15 segmenting a sequence of one or more packet data with the time stamp in unit of the third data unit; and

adding an end code to a data end side in the third data unit, and adding, if necessary, a padding area to the data end side.

20 15. A bitstream information encode method according to claim 14, further comprising:

splitting contents of the data sequence segmented in unit of the third data unit at the second data unit;

25 defining the first data unit stuffed or filled with information essentially having no contents as the padding area when the padding area is present at the end in the third data unit and has a size larger than a

size of the second data unit; and

inserting a header, including information that pertains to the packet data, in a first one of the second data units within the third data unit.

5           16. A method of recording bitstream information encoded by the method of claim 14 on an information medium.

10           17. A bitstream information decode method that handles bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, wherein

15           from bitstream information encoded by: appending a time stamp to each of one or more packet data formed of the first data units; segmenting a sequence of one or more packet data with the time stamp in unit of the third data unit; adding an end code and, if necessary, a padding area to a data end side in the third data unit; splitting contents of the data sequence segmented  
20           in unit of the third data unit at the second data unit; defining the first data unit stuffed or filled with information essentially having no contents as the padding area when the padding area is present at the end in the third data unit and has a size larger than a  
25           size of the second data unit; and inserting a header, including information that pertains to the packet data, in a first one of the second data units within the

third data unit,

the padding area and the header are erased, and the time stamps are also erased to convert the bitstream information into a data sequence consisting of the packet data only.

18. A method of reading out a data sequence, decoded by the method of claim 17, from an information medium on which the bitstream information encoded by the method cited in claim 17 is recorded, and playing back information contents included in the data sequence.

19. An information medium on which the bitstream information encoded by the method of claim 14 is recorded.

20. An information medium for recording bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, said information medium having a configuration wherein

the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain is included in the streamer information,

5            an erase range of a portion of bitstream  
information included in the stream object is designated  
by the start time information and the end time  
information.

the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain includes temporary erase start time information of the first data unit including contents of the cell, and temporary erase end time information of the first data unit including the contents of the cell, and

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5           22. An information medium for recording bitstream  
information formed by a stream object which includes a  
first data unit, a second data unit having one or more  
first data units, and a third data unit having one or  
more second data units, and streamer information that  
10 manages the stream information, said information medium  
having a configuration wherein

the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain is included  
in the streamer information,

the information of the program chain includes  
start time information of the first data unit including  
20 contents of the cell, temporary erase start time  
information of the first data unit including the  
contents of the cell, and temporary erase end time  
information of the first data unit including the  
contents of the cell,

25           a temporary erase range for a portion of bitstream  
information included in the bitstream object is  
designated by the temporary erase start time

information and the temporary erase end time information, and

when the start time information matches a head of the first data unit that starts within the third data unit, the streamer information is rewritten by  
5 adjusting the temporary erase start time information to the start time information of the first one of the first data units which starts within the third data unit that includes the first data unit with the start  
10 time information.

23. An information medium for recording bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or  
15 more second data units, and streamer information that manages the stream information, said information medium having a configuration wherein

the bitstream information includes information of a program formed of one or more cells, and information  
20 of a program chain indicating a sequence of the program or a portion thereof,

the information of the program chain is included in the streamer information,

the information of the program chain includes  
25 start time information of the first data unit including contents of the cell, temporary erase start time information of the first data unit including the

contents of the cell, and temporary erase end time information of the first data unit including the contents of the cell,

5 a temporary erase range for a portion of bitstream information included in the bitstream object is designated by the temporary erase start time information and the temporary erase end time information, and

10 when the cell corresponding to a portion designated as the temporary erase range includes a head of the stream object, the streamer information is rewritten by adjusting the temporary erase start time information to the start time information of the first one of the first data units which starts within the  
15 third data unit that includes the first data unit with the start time information.

24. An information medium for recording bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more  
20 first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, said information medium having a configuration wherein

25 the bitstream information includes information of a program formed of one or more cells, and information of a program chain indicating a sequence of the program or a portion thereof,



the information of the program chain is included in the streamer information,

the information of the program chain includes start time information of the first data unit including contents of the cell, temporary erase start time information of the first data unit including the contents of the cell, and temporary erase end time information of the first data unit including the contents of the cell,

a temporary erase range for a portion of bitstream information included in the bitstream object is designated by the temporary erase start time information and the temporary erase end time information, and

the streamer information is rewritten by adjusting the temporary erase start time information to the start time information of the first one of the first data units which starts within another third data unit immediately followed by the third data unit that includes the first data unit with the start time information.

25. An information medium for recording bitstream information formed by a stream object which includes a first data unit, a second data unit having one or more first data units, and a third data unit having one or more second data units, and streamer information that manages the stream information, said information medium

having a configuration wherein

the bitstream information includes information of  
a program formed of one or more cells, and information  
of a program chain indicating a sequence of the program  
or a portion thereof,

the information of the program chain is included  
in the streamer information,

the information of the program chain includes  
start time information of the first data unit including  
contents of the cell, temporary erase start time  
information of the first data unit including the  
contents of the cell, and temporary erase end time  
information of the first data unit including the  
contents of the cell,

a temporary erase range for a portion of bitstream  
information included in the bitstream object is  
designated by the temporary erase start time  
information and the temporary erase end time  
information, and

the streamer information is rewritten by adjusting  
the temporary erase end time information to the start  
time information of the first one of the first data  
units which starts the third data unit that includes  
the first data unit which immediately follows the cell  
corresponding to the portion designated as the  
temporary erase range.

26. An information medium for recording bitstream

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when a head portion of the stream object is deleted, the third data unit located at a head of the stream object after deletion remains unchanged, and only contents of the management information corresponding to the deleted portion are changed in correspondence with the deletion.

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